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flexible and formative condition which characterized the language at that early and formative period of Greek history. Homer is peculiarly worthy of the study of the philologist not less than the general scholar, as a faithful voucher and true witness, not merely of the state of society, government, morals, and manners of the heroic age (whence Frederic Schlegel fancies he received the name of "Ὀμνηρος, a pledge or voucher), but also for his unconscious testimony to, or representation of, the phenomena of language in that primitive period, when it was still flexible in its form and changeful in its features, but surpassingly rich in material and expression, and as far from being barbarous or savage, as were those elegant works of art which Dr. Schliemann found in the lowest strata of his excavations. The stone age in the language and literature, as in the art and civilization, of Greece was not before the golden age, but long after; it was not before, but long after, the poems of Homer.

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II. — *On the Formation of the Tenses for Completed Action in the Latin Finite Verb.*

By ALBERT HARKNESS,

PROFESSOR OF GREEK IN BROWN UNIVERSITY.

IN investigating the system of verbal inflections, as found in the Indo-European family of languages, the science of Comparative Philology has encountered few problems which have hitherto proved more difficult of solution than that presented in the origin and formation of the Latin perfect. Most of the prominent leaders in the new school of Philology — Bopp, Curtius, Schleicher, Corssen, and, more recently, Westphal and Merguet — have given it careful thought, but the problem still remains unsolved. Many valuable facts have indeed been collected by these eminent scholars, and much light has been thrown upon many obscure points; but no explanation has yet been proposed which can be said to account fully for all the facts in the case; no theory devised which has met with general recognition among the scholars

of the world. The question therefore of the origin and formation of the Latin perfect is unfortunately still an open one; and though its difficulty might well deter us from entering upon so unpromising a discussion, its great importance, from its vital connection with the whole subject of Comparative Philology, imperatively demands that we should still continue to investigate it. Each discussion may in its turn throw some new ray of light upon it, until at length its secret, we may hope, shall be exposed to the full light of day. If therefore this paper should succeed, even in the smallest measure, in preparing the way for the final solution of this difficult question, my attempt will not have been made in vain.

The Latin, Greek, and Sanskrit undoubtedly inherited from the mother tongue of the Indo-European family the power to express completed action by means of *reduplication*, and to create new tense-forms through the help of *auxiliary verbs*. The Latin, in its treatment of tenses for completed action, is distinguished from the Greek and the Sanskrit by a freer use of compound tense-forms to supply the place of the reduplication. While in the Greek λέλυκα, πέποιθα, and in the Sanskrit *babháva*, *śakára*, the reduplication is indispensable, in the Latin *amavi*, *audivi*, *monui*, *rexi*, no trace of it appears. The Latin has indeed retained a few reduplicated perfects, as *cecīdi*, *cecīni*, *pepēri*, but in comparison with the vast number of compound forms, these appear but exceptions to the general rule.

But before we enter upon the discussion of the Latin perfect, it seems desirable to examine some of the compound forms in the other tenses for completed action, the pluperfect and future-perfect indicative and the perfect and pluperfect subjunctive. In these forms the auxiliary does not necessarily supply the place of the reduplication. In analyzing *cecineram*, as an illustration, we at once recognize the modified root *cin* with its reduplication *ce*, and the auxiliary verb *eram*. The root *cin* gives the general meaning of the verb, the reduplication *ce* denotes completed action, while *eram* adds the idea of past time. Hence we have an

expression for completed action in past time. The Greek *ἔπειποιθειν* is a precisely analogous formation, consisting of the modified root *ποιθ* with its reduplication *πε* and the auxiliary *ἦα*, *ἦαμ* = *ἦσαμ* = *eram*. If now we compare the other tenses for completed action — *cecínero*, *cecínérin*, *cecínissem* — with *cecínérām*, which we have just analyzed, we shall find that they differ from it only in the form of the auxiliary. Let us notice this point of difference more carefully.

*Eram* and *ero* in *cecínérām* and *cecínéro* appear to be the unchanged forms of the imperfect and future of the auxiliary *sum*, and indeed, if our analysis of *cecínérām* is correct, they are such. It then seems to follow as a matter of course that in *cecínérin*, *erim* is the present subjunctive of the auxiliary *sum*, and that it is for *esim*, the full form for *sím*, which drops the initial vowel *e*, as it is also dropped in *sum* for *esum*, though retained in the Greek forms *ἔστί*, *ἔσμεν*, *ἔστέ*. The change of *s* in *esim* to *r* in *erim* is in accordance with a well-known law of the language which usually changes *s* to *r* between two vowels.

We have thus explained all the forms of the auxiliary in these compounds, except *issem* in *cecínissem*. That alone presents some difficulty. Whence comes the vowel *i*? What is the full form of each of the elements in *cecínissem* and how do they unite to form the compound? Are the elements *cecíní-essem*, *cecíní-ssem*, or *cecín-issem* with *issem* for *essem*? The second combination is the one generally adopted. Curtius says of the first (*cecíní-essem*) that it would give *cecínēssem* rather than *cecínissem*. This we freely admit. But what is the objection to the third (*cecín-issem*)? This alone would be in harmony with our explanation of the other compound tenses. The *i* in *issem* is undoubtedly of the same origin as the *e* in *eram*, *ero*, *erim*. May it not then come from *e* in *essem*? According to Corssen and others of undoubted authority, *essem* was originally *esem*, which would be the regular subjunctive — originally optative — formation from the indicative *eram* = *esam*. But *cecín-ěsem* would become *cecín-ĭsem*, according to a well recognized principle that in reduplicated and compound verbal forms *a* and *e* are weakened:

as *cado*, *cecidī*; *cano*, *cecini*, where *a* is weakened to *e* in the reduplication and to *i* in the stem-syllable; also *emo*, *adīmo*; *lego*, *colligo*, where *e* is weakened to *i* in the compounds. Thus *esem* became *isem* in *cecin-isem*; but when it became a recognized rule that *s* between two vowels should be changed to *r*, the alternative was presented by which *isem* would become *irem*, *erem*, as in the indicative *esam* became *eram*, or *s* would be doubled and thus protected against change. In the same manner the imperfect *esem* would become either *erem* or *essem*. The latter seems to have been the course actually pursued both in the simple *esem* and in its compounds; and hence we have *essem* and *cecinissem*. This is moreover confirmed by the fact that compound forms have been found with these different endings — *eset*, *esset*, and *isset*; as, *adi-ēsset*, *adi-esset*, and *adi-isset*.

But the explanation just given for the *i* in the ending *issem* is at variance with the generally received opinion upon the subject. Corssen, seeing that the *i* in *issem* is undoubtedly of the same origin as the *e* in *eram*, *ero*, *erim*, and the final *i* in *cecini*, identifies all these vowels with the long *i* in the perfect. In his view *cecin-eram* is a compound of *cecini* and *eram*. But, if that is the correct analysis of the form, how does the long *i* in *cecinī-ram* become short *e* in *cecin-eram*? Do we find any general analogy for this change? Indeed, would not such an analogy change the imperfect subjunctive, *audī-rem*, to *audē-rem*? The cases are entirely parallel.

But how shall we explain the endings of the perfect — *i*, *isti*, *it*, *imus*, *istis*; *erunt* or *ere*? This inquiry brings us to the vital point in our whole investigation — the formation of the Latin perfect.

The Latin perfects naturally divide themselves, in respect to formation, into three classes:

I. Perfects in *ui* and *vi*: *alo*, *alui*; *colo*, *colui*; *amo*, *amavi*; *audio*, *audivi*.

II. Perfects in *si*: *carpo*, *carpsi*; *dico*, *dixi*; *rego*, *rexī*.

III. Perfects in *i*: *cado*, *cecidī*; *tango*, *tetigi*; *capio*, *cepi*; *ico*, *ici*.

If now we inquire what is the tense-sign in each of these

three classes, what characterizes these forms as perfect tenses, we shall find that perfects in *ui*, *vi*, and *si* are compounded with perfect tenses of auxiliary verbs. The tense-sign of the compound must therefore be sought in the auxiliary. All other perfects, i. e. simple perfects in *i*, according to Bopp, Curtius, Schleicher, Westphal, and others, were originally reduplicated and the reduplication constituted the tense-sign. As this conclusion, whose correctness I think there can be little reason to doubt, has been accepted with so little dissent, it will be sufficient simply to indicate in brief the general character of the argument by which it has been reached.

1. The simple perfects in the Greek and in the Sanskrit are reduplicated.

2. In Latin some of the perfects in *i* retain the reduplication in full, while most of the others lengthen the stem-vowel, thereby showing traces of a lost reduplication.

3. With four exceptions, the few perfects which retain the unchanged stem have the stem-vowel already long either by nature or by position. Moreover, of these four exceptions—*scidi*, *tuli*, *bibi*, and *fidi*—the first and second have archaic forms with reduplication, the third is in fact a reduplicated perfect, while all analogy shows that the fourth (*fidi*) must have been originally *ffidi*.

4. In some verbs there are found side by side reduplicated simple perfects and compound perfects without reduplication, showing that the tense-sign in the simple form resides in the reduplication and in the compound in the auxiliary, as *teneo*, *tetini*, *tenui*; *pango*, *pepigi*, *panxi*.

But we must hasten to consider the compound perfects. These end in *ui*, *vi*, and *si*. Those in *ui* and *vi* were explained by Bopp as compounds of *fui*, those in *si* as compounds of *esi*, a perfect formed from *es*, the root of *sum*, and corresponding to the Sanskrit *āsa* = *fui*. This explanation has been generally accepted by philologists, but has of late been called in question by Westphal and Merguet, the latter of whom denies its application even to *potui* for *pot-fui*, as the perfect of *possum*. He explains *potui* as formed from *potivi* from *potio*, and thus, as he conceives, deprives Bopp's theory of its very strongest support.

At first Westphal and Merguet both took the position that compound tenses may be produced by the union of inflected forms with each other, but not by the union of such forms with naked stems. They recognized such compounds as appear in the Sanskrit periphrastic perfect, *corayām-āsa*, and in the French future, *j'aimer-ai*, but not such as Bopp found in the Sanskrit *ā-dik-sham*, in the Greek *ἔδειξα*, and in the Latin *alui*. Such was Westphal's position when his Greek Grammar appeared; but in a special work on the Latin verbal inflections, published last year, he recedes from this position and expresses, in a most unqualified manner, the conviction that the Latin perfects in *ui* and *vi* are compounds of *fui*, and those in *si* compounds of *esi*.

But Merguet in his work entitled *Die Entwicklung der lateinischen Formenbildung*, published in 1870, claims that the union of inflected forms with naked stems is in itself a contradiction, inasmuch as, in his judgment, the two elements of the compound belong, as independent words, to different ages in the development of language.

To this sweeping criticism, Curtius in his recent work on the Greek verb replies:

1. That the assumption, that there could have been no transition period in which naked stems and inflected forms may have existed side by side as independent words, is utterly without foundation.

2. That compounds of inflected forms with naked stems do undoubtedly exist; that indeed no other reasonable explanation can be given of such forms as *λογο-ποιός*, *πυρ-φόρος*, and the like.

Thus the objection to Bopp's theory that the Latin perfects in *ui*, *vi*, and *si* are compound forms has, in my judgment, been fairly met. We proceed to examine the compounds themselves.

*Alo*, *al-fui*, *alui* (*f* dropped); *amo*, *ama-fui*, *ama-ui*, *amiavi* (*f* dropped and *u* changed to its corresponding *v* between two vowels); *carpo*, *carp-isi*, *carpsi* (*i*, for *ē*, dropped); *dico*, *dic-isi*, *dixi* (*i* dropped and *e-s* united in *x*). Now all these perfects are such only by virtue of the auxiliary *fui* and *esi*

contained in them. But what imparts to *fui* and *esi* their character as perfect tenses? That they are such, there can be no doubt, but what makes them so is not equally clear. Let us, however, compare these forms with the Sanskrit and Greek perfects from the same roots. The Latin *fui* and the corresponding Sanskrit *ba-bhúv-a* are inflected as follows :

fu-i,	ba-bhúv-a,
fu-isti,	ba-bhúv-itha,
fu-it,	ba-bhúv-a,
fu-imus,	ba-bhúv-ima,
fu-istis,	ba-bhúv-a,
fu-erunt or -ere.	ba-bhúv-us.

The contrast is scarcely less remarkable than the resemblance. They are undoubtedly corresponding forms, but they seem to have received very different treatment. The Sanskrit retains the reduplication; the Latin, apparently, no trace of it. The endings of *ba-bhúv-a* are not peculiar, those of *fui* are without a parallel, or even an analogy, in any other tense in the Latin verb. The Greek *πέφυκα* throws no light upon *fui*; we compare *esi* with the Sanskrit *āsa*, and we encounter the same contrast as before; *āsa* is inflected precisely like *ba-bhúv-a*; *esi*, precisely like *fui*.

Let us now note the points of difference and set distinctly before us the peculiarities of the Latin perfect, as seen in *fui*, *esi*, and their compounds.

1. The reduplication appears in full in the Sanskrit and in the Greek, but not in the Latin; though we should indeed have its equivalent in *esi*, if we could prove that the initial *e* is long, as is generally assumed without proof from its connection with the Sanskrit *āsa*; but as this vowel uniformly disappears from the Latin paradigm without leaving any trace behind, there is, I think, good reason to question the assumption that it is long.

2. The *i* in *fui* is peculiar and requires explanation.

3. So also are the endings *isti*, *istis*, *erunt*, and *ere*.

In this list there are at least three or four points, which by general consent have never been satisfactorily explained. In regard to Bopp's labored effort to bring the Latin perfect into some sort of harmony with Sanskrit aorist forms, Corssen



remarks that in the midst of all these varying and at times contradictory statements, he has endeavored in vain to find a consistent explanation of the Latin perfect in harmony with the facts in the case. His own words are: "Ich bin vergebens bemüht gewesen, in diesen und anderen schwankenden und sich zum Theil widersprechenden Angaben, eine feste und consequente mit den Thatsachen der lateinischen Sprache in Einklang stehende Erklärung des lateinischen Perfectum zu finden." With the same emphasis he also rejects the suggestion of Curtius, that the long *i* of the Latin perfect may be identical with the short *a* in the Sanskrit perfect. Schleicher recognizes in a verb like *facio* three distinct stems for the perfect: *fac* in *fac-sim*, *fec* in *fecit*, and *fecis* in *fecis-tis*. The first and third of these Corssen discards utterly; in regard to the second (*fec*), Schleicher himself admits that the *i* is added to the perfect stem, and is moreover of uncertain origin. His words are: "Ausserdem tritt ein in seinem Ursprunge dunkles *i* an den Ausslaut des Perfect-stammes." No explanation is attempted of this troublesome *i*. Corssen calls it a vowel of formation (*Bildungsvocal*), and with Aufrecht identifies it with the *i* in the Sanskrit aorist in *isham*, as *āvēdisham*, but attempts no explanation. He derives *s* in the first syllable of *isti* and *istis* and *r* in *erunt* from the stem *es*, and in this view is supported by Curtius; though, so far as I see, neither of these eminent linguists makes any use of the fact.

Such, if I understand it aright, is the present state of the question involved in the formation of the Latin perfect. In view therefore of the great uncertainty which still hangs over several important points connected with it, I venture, with unfeigned diffidence, to submit to the thoughtful consideration of my fellow-laborers in this field a few suggestions, in the hope that they may at least aid us in our subsequent investigations.

A word upon the manner in which the Latin auxiliaries *fui* and *esi* are used in forming compound tenses, in distinction from the corresponding use of auxiliaries in the Greek and Sanskrit, may not be entirely useless at this point. We

notice first that when the Sanskrit *āsa* and *ba-bhāv-a* are used in the formation of the periphrastic perfect, the auxiliary is retained in full with reduplication — *corayāmāsa*; and secondly, that in such compounds as the Sanskrit *ā-dik-sham* (= *dik* and *āsam*) or the Greek *ἔδειξα* (= *δεικ* and *ἔσα* or *ἦσα*), the augment is uniformly retained. In Latin, on the contrary, though all the compounds of *fui* and *esi* uniformly retain *ui*, *vi*, and *si*, the *e* in *esi* entirely disappears in every instance, and with it all trace of that which makes it a perfect tense, if it is formed like the Sanskrit *āsa*. These facts suggest the inquiry whether *esi* may not be a slightly different formation from *āsa*, though an entirely analogous one; whether indeed we may not find here in the treatment of the auxiliary itself, the key to the explanation of some peculiarities of the Latin perfect.

The Sanskrit *āsa* is, I think, admitted to represent an earlier form *asasa* or *asasma*, with the root repeated in accordance with the original idea of the reduplication. Moreover, it will be observed that we have here only the repetition of a single syllable *as*, like that of *οπ* in *ὅπωπα*, *οδ* in *ὅδωδα*, *ακ* in *ἀκήκοα*, and like the corresponding reduplication in the Zend. After the analogy of *asasma*, the Latin *es* would give *esismi* inflected thus:

esismi	= esīmi = esī,
esisti	esisti,
esisti	= esist = esīt,
esismus	esimus,
esistis	esistis,
esīsunt	esīsunt.

That *es* reduplicated produces *esis*, instead of *eses*, is in accordance with the well-known principle, already mentioned, by which *a* and *e* are often weakened in the reduplicated and compound forms: *cado*, *cecidi*; *emo*, *adīmo*; *dedi*, *condidi*. Moreover, that the *i* before *t* in *dixit* may be identical with *e* seems to be supported by the fact that the form in *et* actually occurs in early inscriptions. Again, *i* is the favorite vowel before *s*, as is abundantly shown by Latin forms, such as *cinis*, *cineris*; *pulvis*, *pulveris*; so also before *st* in the middle of a word: as in *antisto*, *antistes*, etc.

But let us now examine the changes which take place in our inflection of *esismi*. For the dropping of *s* before *m* in *mi* and *mus* in the first person singular and plural, we may adduce not only the corresponding treatment of the Greek *c* in *εἰμί* for *ἐαμί* and *ἡμεν* for *ἡσμεν*, but also the well-known usage of the Latin which often drops *s* before *m* in similar cases, as in *rēmus* for *resmus*, *ōmen* for *osmen*; *Cāmēna* for *Casmēna*. If now we drop the personal ending *mi*, in accordance with the general usage in the first person singular of all leading tenses of the indicative, and then lengthen the preceding vowel in compensation, we shall have *esī* and *esīmus*. In the latter the *i* in the penult may be either long or short—short, if it follows the analogy of *Cāmēna* for *Casmēna*, long, if it follows the more common analogy of *ōmen* and *rēmus*. Upon the latter supposition, it must have been subsequently shortened—a treatment by no means uncommon in vowels which have been lengthened by the principle of compensation, as in *pedēts*, *pedēs*, *pedēs*.

The dropping of *i* final in the personal ending of *esisti* in the third personal singular requires no explanation, as it is in accordance with the general usage. In the same form the significance of the *s* before *t*, as a part of the stem, was in process of time practically lost, and finally the letter itself disappeared under the influence of the endings *at*, *et*, *it*, which regularly represent the third person singular in the Latin indicative and subjunctive. Thus *esist* became *esit* by a process which finds its complete analogy in the Greek *ἦρον* for *ἦσρον*, and in the Sanskrit imperfect *a-śat* for *a-śast*, and in the aorist *á-bod-it* for *a-bod-ist*.

*Ti* in *esisti* of the second person singular is a recognized ending for that person and corresponds to the Sanskrit *tha*, the Greek *θι* in *ἴσθι*. It forms also the first element in *tis* of the second person plural. The quantity of the final *i*, which Westphal pronounces a still greater problem than the preceding *st*, illustrates a treatment of this vowel by no means uncommon in the Latin. Short final *i*, it is well known, is generally lengthened, or changed to *e*. The Latin *istī*, as compared with the Greek *ἴσθι*, shows precisely the

same change in quantity, as actually appears in the Latin *sināpī* as compared with the Greek *σίναπι*.

The *i* in the penult of *istī*, which is long by position, seems to have been at times treated as long by nature, perhaps after the analogy of long *i* in *esī* and *esīt*. The subsequent shortening of *ī* in this last form *esīt* before final *t*, requires no explanation, as it follows the general usage.

In the third person plural, *īsunt* became first *īrunt*, a form which actually occurs in inscriptions, and then *ērunt*. But in the classical period the penult of *erunt* was generally long, a fact which may be best explained in connection with the shorter ending *ēre*, as seen in *dixerunt* or *dixere*. This ending is generally explained as formed from *erunt* by dropping *nt* and weakening *u* to *e*. Westphal objects to this view, on the ground that the Latin nowhere else drops the plural ending *nt*, and that, if it did so here, we should probably have *ēro* and not *ēre*. He does not recognize the auxiliary *sunt* either in *erunt* or *ere*. I do not regard these objections as at all decisive against the common explanation, but I venture to suggest another, that in making our selection we may at least have a little wider choice. The Latin treatment of the root *es*, as seen in the verb itself, gives, in the third plural, *esunt*, which becomes *sunt* or *erunt*; but as *erunt* points back to *esunt*, so *ēre* seems to suggest an earlier form *ēsē* or *ēsī*, the latter of which finds an exact parallel in the Greek *εἰσι* from *ἔσντι*, and is formed in strict accordance with principles of general application, alike in Latin, Greek, and Sanskrit. In this form, *si* represents the personal ending *ti*; but *t* before *i* is often thus changed to *s*, as in *consensio*, *dissensio*, precisely as *τ* before *ι* is changed to *σ* in *εἰσι*. But in Latin *ēsī* becomes first *ērī*—a form actually found in inscriptions—and then *ērē* as in *carpsēre*, *dixēre*. Thus there may have existed, in the infancy of the language, two distinct forms side by side—a shorter form in *ēre*, with the penult uniformly and necessarily long, and a fuller form in *erunt*, with a short penult which may have become gradually lengthened by the analogy of its associate *ēre*. As a matter of fact, this penult was generally long, though by

no means uniformly so; and if the more common derivation of *ēre* from *erunt* be preferred to the one here proposed, we may, I think, without impropriety assume that *e* in *erunt* was lengthened to bring it into harmony with the other long vowels in the endings of this tense.

If now we form perfects by appending the auxiliary *esi* to the roots *carp* and *dic*, we shall have *carp-īsi* and *dic-īsi* and, dropping *ī* (*ē*), *carpsi* and *dixi*, inflected thus:

carpsi,	dixi,
carpsisti,	dixisti,
carpsit,	dixit,
carpsimus,	diximus,
carpsistis,	dixistis,
carpsērunt (or -ēre).	dixērunt (or -ēre).

From *esi*, or its stem *esis*, may now be formed the other tenses for completed action, *esisam*, *esiso*, *esisim*, *esissem*, precisely as *esam* (= *eram*), *eso* (= *ero*), *esim* (= *sim*), and *essem* are formed from the root *es*. If now we append these tenses of the auxiliary to *carp* and *dic*, dropping the initial *e* and observing the ordinary euphonic changes, we obtain the regular classical forms.

carp-sisam = carpseram,	dic-sisam = dixeram,
carp-siso = carpsero,	dic-siso = dixero,
carp-sisim = carpsirim,	dic-sisim = dixerim,
carp-sissem = carpsissem.	dic-sissem = dixissem.

Our discussion seems to warrant the conclusion that in the class of verbs which we have been examining, the peculiarities of the Latin perfect — the final *i*, *s* in the first syllable of *īsti* and *īstis*, and the peculiar endings *erunt* and *ere* — may all be the direct result of the reduplication of the root *es* in the auxiliary. They are all readily explained in this manner without doing violence to any known law of the language, and without requiring the insertion of a single letter, even of a connecting vowel.

The examination of *fui* and of perfects in *ui*, *vi*, and *i* is reserved for a future paper.